



TREE PLANTING GUIDELINES

Prepared by Maureen Sexsmith-West, ISA Certified Arborist PR4600A

A tree is a long-term investment. Successful planting can be simple if you follow these guidelines: If a tree cannot be planted immediately, store it upright in the shade and water daily. The root ball should be damp at all times.

Start with Quality Tree Stock and ensure your planting location will allow for the mature size of the tree/shrub. Avoid trees with altered leaders or vegetation growing in pot. Pull it out of the pot to assess level of girdling/encircling roots before you bring it home. Ensure it will not be overcrowded by other trees assess plant spacing. This will improve the health of your tree and minimize your maintenance costs over the life of the tree.

Moving the Tree to the Planting Site:

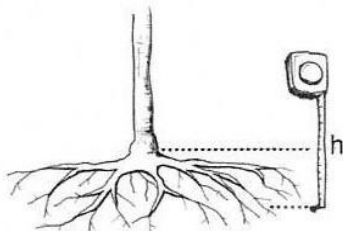
- Protect against wind damage during transport from the Nursery.
- DO NOT** lift the tree by the trunk or drop it to the ground suddenly. The weight of the soil may crush the roots. *Lift the tree from the bottom of the ball. If there is a wire basket use the handles or top ring of the basket.*

How to determine the correct planting depth

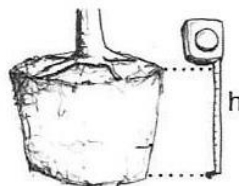
- The first or uppermost roots should be just below the finished soil line.
- Some trees may be accidentally planted too deep at the nursery so soil may need to be removed to find the first roots. A probe can also be used to determine depth to the first roots.
- Before you begin to dig, measure the height from the bottom of the root ball to the first roots to determine hole depth.



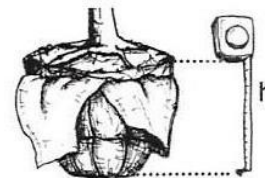
Bare root
(roots spread out flat on the ground)



Containerized
(excess soil removed)



Balled and burlapped
(excess soil removed)

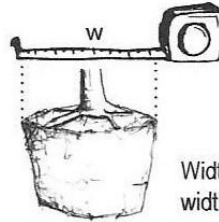


h = depth of planting hole

Digging the Hole

- Identify the tree's root collar – the flared trunk area just above the root system.
- Prepare the site by digging a wide saucer shape hole 2 – 3 times the width of the root ball and **ONLY** as deep as the root collar. Place your soil onto a tarp so it can be re-used as fill. **MAINTAIN A FIRM BASE FOR TREE TO BE PLACED** so it does not settle and sink. Scarify the edges to avoid a smooth surface.

DO NOT dig the hole too deep. It is better to have the root ball 5 cm higher than the ground level because of settling than 5 cm lower. Take out large stones from the soil removed from the hole.

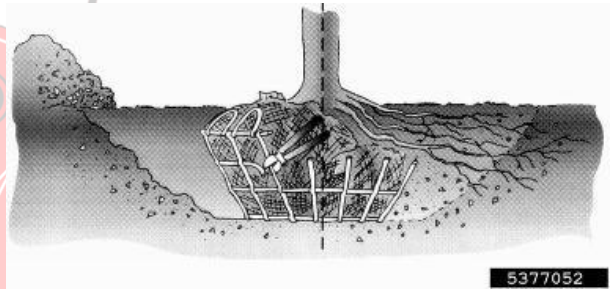


Width of hole should be 2-3 times the width of the root ball

Planting the Tree:

BALLED AND BURLAPED: If tree comes wrapped in a wire basket, this SHOULD BE ENTIRELY REMOVED WITHOUT DISTURBING THE ROOT BALL.

- Remove the bottom of the cage, set the tree into place and clip the rest of the cage off after the tree is stabilized in the planting pit. If this is not possible, horticulturists recommend removing at least the top 12 to 18 inches (two to three levels) of wire from the root ball. This will allow the major roots and trunk to grow without any possibility of becoming girdled by the wire. Remove all string, strapping from around the tree's trunk.



- Remove all natural burlap from the top and at least one third down the sides of the root ball. Natural burlap can be left along the remaining two thirds of the sides of the root ball. It will usually rot in the soil. Just pulling the burlap away from the root ball and tucking it into the hole can leave air pockets in the soil and cause the roots to dry out. Cut away as much burlap as possible before backfilling.

Back Filling Hole

- Shake any loose planting medium onto tarp with native soil. If desired, add **NO MORE THAN 20 percent** organic matter. This is the 'transition zone' for the root system to move from the original growing medium to its permanent soil type.
- As the back fill is added lightly push the soil around the roots. (Do not pack the soil after you water.) Avoid over compacting soil as it will restrict root expansion and water penetration.



- Continue to back fill to the height just below the root collar. Don't back fill the tree too deeply. After watering thoroughly, if there is not enough soil, add more and water again.
- After the soil is thoroughly watered, form a saucer around the tree for holding additional water.

What happens if a tree is planted too deep?

Recent research has shown that most trees are accidentally planted too deep. Planting too deep can cause:

- Reduced growth rate
- Dwarfed leaf size and/or defoliation
- Yellowing (often mistaken for poor soil nutrition)
- Late spring leaf emergence
- Early fall coloration
- Bark splitting
- Increased susceptibility to borers
- Girdling roots
- Branch dieback
- Eventual tree death



The symptoms of decline can take several years to appear, particularly if the deep planting is a result of backfill or over-mulching a mature, established tree. The earlier the root collar is exposed, the better the chance of tree survival.



How to plant Containerized Trees

- Remove the tree from the container by holding the trunk of the tree with one hand and pushing down on the container with the other hand. If the container does not come off easily cut it down two sides.
- The tree may be planted too deep in the pot. Remove the soil down to the first roots onto your tarp.
- If there are encircling roots, slice through them with a sharp knife. Make 3-4 vertical cuts in the root ball. After cutting, pull the roots apart. Dig the hole just deep enough so the first roots will be just below finished grade. **DO NOT** loosen soil under the root ball below this depth.
- Position the tree as straight as possible in the center of the hole and at the proper Depth – ensure the root collar/flare is level with the grade of the landscape.
- Treat deciduous root balls with Mycorrhizae (Myke brand). **DO NOT** add any fertilizers into the hole or nitrogen based products until the second growing season.



Mulching

- Weed and turf suppression during establishment is essential. Apply approximately a 3-inch (15 cm) thick layer of natural mulch around the tree. Keep mulch at least 4 inches (20 cm) away from the trunk to prevent fungus from growing on the tree trunk. (The old volcano method of mulching kills trees.)
- Bark mulches are best (do not use fabric) to allow for soil enrichment.



Pruning

It is best to limit pruning of the new tree to damaged twigs or obvious defects until the second growing season.

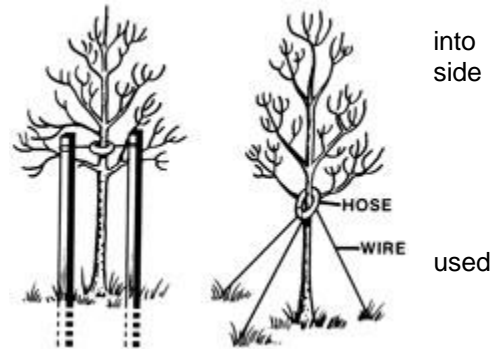
Staking

The purpose of staking is to stabilize the root ball. Be sure tree is straight. In many instances, if root balls are heavy enough stakes are not necessary. If a tree requires staking, drive one or two stakes into the undisturbed soil at the sides of the hole, not the root ball. In our region it should be placed on the West of the tree.

Use fabric ties securing them around the trunk and each stake.

Wire threaded through a piece of garden hose can also be used but are less desirable.

Ties should be flexible to allow slight movement of the trunk. This allows roots to prepare and respond to typical winds. Ties should be checked and adjusted periodically to prevent girdling of the tree. **Stakes should be removed after 18 months.**



Watering

Water the tree after planting. Make sure to soak the soil close to the trunk and the entire planting area. Water the tree when soil feels dry at a 2-4 inch depth during the first year.

Your newly planted tree will need plenty of water to get established. Water at least once a week in dry weather giving it a really good soaking (a trickle from a garden hose for at least one hour). Make sure the water penetrates the original root ball that may dry out sooner than your soil around it.

Trees that are under-irrigated during the establishment period often require additional time to establish because roots grow more slowly.

After Care

Monitor for wilting – this is most often a symptom of inadequate water

Monitor for pests – check foliage and twigs regularly. Rub, squish or remove any non-beneficial insects.

Monitor for disease – learn about what diseases can affect your species of tree and check periodically.

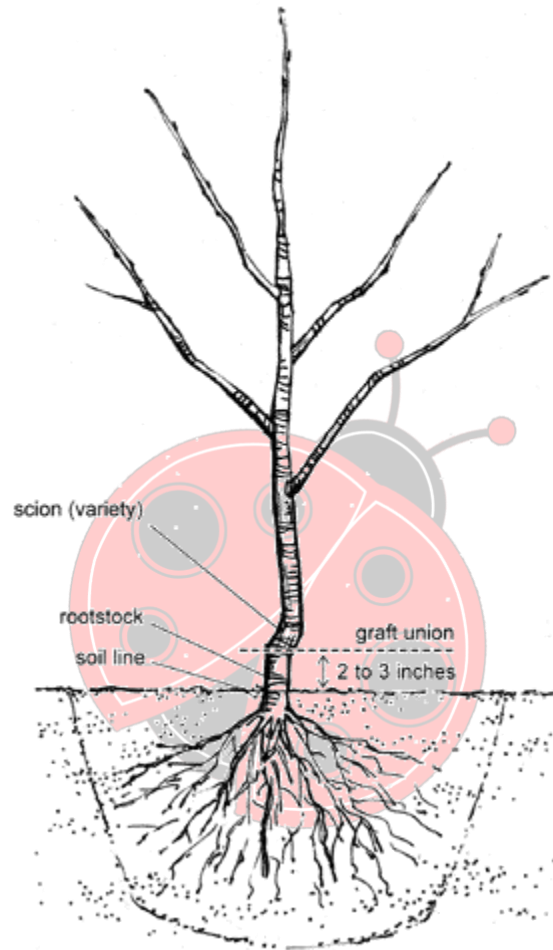
Most diseases required sanitation methods of care.

References and some photo/image credits: Dr. Edward Gilman, Environmental Hort. Dept., University of Florida NJ; Ladybug Arborists

*Dept of Environmental Protection, Division of Parks and Forestry
ISA Tree Planting Guidelines and ANSI Standards for Planting Tree*

Proper Tree Planting Diagram

Depth for Root Grafted Trees



Proper Tree Planting Diagram

Depth for Deciduous Trees (Balled and Burlapped or Basketed)

